

PATENT ABSTRACTS OF JAPAN

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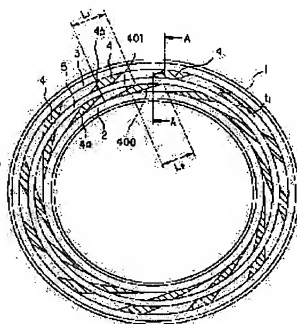
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(54) PACKING

(57)Abstract:

PROBLEM TO BE SOLVED: To provide a packing for preventing the local wear of an inner periphery lip.

SOLUTION: The packing comprises a circular packing body 1, the inner periphery lip 2 and an outer periphery lip 3 protruded axially from one side face of the packing body 1 in radially separated relation, and a plurality of connection ribs 4 formed on the packing body 1 in circumferentially spaced relation so that inside faces 2a, 3a of the inner periphery lip 2 and the outer periphery lip 3 are connected to each other. The plurality of connection ribs 4 extend in almost the same tangential direction to the inside face 2a of the inner periphery lip 2 and have heights not exceeding outer end faces 2b, 3b of the inner and outer periphery lips 2, 3. The pressure receiving area of an outside face 401 of the connection rib 4 is equal to that of an inside face 400.



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CLAIMS

[Claim(s)]

[Claim 1] The inner circumference lip and periphery lip which projected to shaft orientations, and were formed in one side face of an annular packing body and this packing body, and were estranged by radial, it has two or more connection ribs with which it was formed in the packing body and spacing was kept in the circumferential direction so that each medial surface of this inner circumference lip and a periphery lip might be connected. Packing characterized by making equal the projected net area of the lateral surface of a connection rib, and a medial surface in packing with which two or more above-mentioned connection ribs were made into the height of the same direction which is mostly prolonged in a tangential direction and does not exceed the outer edge surface of a periphery lip inside to the medial surface of an inner circumference lip.

[Claim 2] Packing according to claim 1 characterized by making equal the projected net area of the lateral surface of the near lower division connection rib with which Liv Nakama prolonged on the periphery on the packing body between the above-mentioned inner circumference lip and a periphery lip was formed, and the above-mentioned connection rib was divided into radial, and was connected with the inner circumference lip among the divided vertical partial cleavage connection ribs by above-mentioned Liv Nakama, and a medial surface.

[Claim 3] Packing according to claim 2 characterized by making equal the projected net area of the lateral surface of a lower division connection rib, and a medial surface by making almost equal the near lateral-surface die length L1 and the near medial-surface die length L2 of a lower division connection rib which were connected with the inner circumference lip among the divided vertical partial cleavage connection ribs.

DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Field of the Invention] This invention relates to amelioration of packing.

[0002]

[Description of the Prior Art] Conventionally packing known for drawing 3 (equivalent to JP,5-588,B) The inner circumference lip 32 and the periphery lip 33 which projected to shaft orientations, and were formed in 1 side-face 31a of the annular packing body 31 and this packing body 31, and were estranged by radial, It has two or more connection ribs 34 with which it was formed in the packing body 31, and spacing was kept in the circumferential direction so that each medial surfaces 32a and 33a of this inner

circumference lip 32 and the periphery lip 33 might be connected. It extends in a tangential direction mostly, two or more above-mentioned connection ribs 34 -- medial-surface 32a of the inner circumference lip 32 -- receiving -- the same direction -- inside It considers as the height which does not exceed the outer edge surface of the periphery lips 32 and 33. On the packing body 31 between the above-mentioned inner circumference lip 32 and the periphery lip 33 Liv Nakama 35 made into the height which is prolonged on a periphery and does not exceed the outer edge surface of the periphery lips 32 and 33 inside is formed, and the above-mentioned connection rib 34 is divided into radial by above-mentioned Liv Nakama 35. And the die length L3 of the lateral surface 341 of lower division connection rib 34a of the side connected with the inner circumference lip 32 among the vertical partial cleavage connection ribs 34b and 34a by which division was carried out [above-mentioned] is formed for a long time compared with the die length L4 of a medial surface 340, and he is trying for the projected net area of the lateral surface 341 to become larger than the projected net area of a medial surface 340.

[0003]

[Problem(s) to be Solved by the Invention] In the above-mentioned conventional packing Since the lateral-surface die length L3 of lower division connection rib 34a of the side connected with the inner circumference lip 32 among the vertical partial cleavage connection ribs 34b and 34a by which division was carried out [above-mentioned] is formed for a long time compared with the medial-surface die length L4 and the projected net area of the lateral surface 341 is made larger than the projected net area of a medial surface 340, At the time of the hydraulic actuation to packing, as for lower division connection rib 34a, a pressure acts from the lateral surface 341 with a large projected net area to the medial surface 340 with a small projected net area. Consequently, it is pressed by the phase hand part material to which the medial surface 340 of lower division connection rib 34a contacts the inner circumference lip 32, and there is a possibility that excessive abrasion may arise to the inner circumference lip 32. If excessive abrasion arises to this inner circumference lip 32, it will lead to the sealing fall of the inner circumference lip 32.

[0004] Then, this invention aims at offering packing which prevents the excessive abrasion of an inner circumference lip.

[0005]

[Means for Solving the Problem] As above-mentioned The means for solving a technical problem, invention of claim 1 The inner circumference lip and periphery lip which projected to shaft orientations, and were formed in one side face of an annular packing body and this packing body, and were estranged by radial, It has two or more connection ribs with which it was formed in the packing body and spacing was kept in the circumferencial direction so that each medial surface of this inner circumference lip and a periphery lip might be connected. In packing with which two or more above-mentioned connection ribs were made into the height of the same direction which is mostly prolonged in a tangential direction and does not exceed the outer edge surface of a periphery lip inside to the medial surface of an inner circumference lip, it is characterized by making equal the projected net area of the lateral surface of a connection rib, and a medial surface.

[0006] Moreover, Liv Nakama prolonged on the periphery on the packing body between the above-mentioned inner circumference lip and a periphery lip is formed, and invention of claim 2 is characterized by making equal the projected net area of the lateral surface of the near lower division connection rib with which the above-mentioned connection rib was divided into radial, and was connected with the inner circumference lip among the divided vertical partial cleavage connection ribs by above-mentioned Liv Nakama, and a medial surface.

[0007] Invention of claim 3 is characterized by making equal the projected net area of the lateral surface of a lower division connection rib, and a medial surface further again by making almost equal the near

lateral-surface die length L1 and the near medial-surface die length L2 of a lower division connection rib which were connected with the inner circumference lip among the divided vertical partial cleavage connection ribs.

[0008]

[Embodiment of the Invention] Hereafter, the gestalt of concrete implementation of this invention is explained. Drawing 1 and drawing 2 are the operation gestalten of packing of this invention. The inner circumference lip 2 and the periphery lip 3 which projected to shaft orientations, and were formed in 1 side-face 1a of the annular packing body 1 and this packing body 1, and were estranged by radial. It has two or more connection ribs 4 with which it was formed in the packing body 1, and spacing was kept in the circumferential direction so that each medial surfaces 2a and 3a of this inner circumference lip 2 and the periphery lip 3 might be connected. Let two or more above-mentioned connection ribs 4 be the height of the same direction which is mostly prolonged in a tangential direction and does not exceed outer edge surface 2b of the periphery lips 2 and 3, and 3b inside to medial-surface 2a of the inner circumference lip 2. The inner circumference lip 2 side decreases continuously gradually from the circumferential direction width of face t1 of each above-mentioned connection rib 4, and the periphery lip 3 side. moreover, to one side-face 1a of the packing body 1 between the above-mentioned inner circumference lip 2 and the periphery lip 3 Liv Nakama 5 made into the height which is prolonged on a periphery and does not exceed outer edge surface 2b of the periphery lips 2 and 3 and 3b inside is formed. The above-mentioned connection rib 4 is divided into radial by above-mentioned Liv Nakama 5, and it considers as the vertical partial cleavage connection ribs 4b and 4a. The height h1 of lower division connection rib 4a connected with the inner circumference lip 2 among these divided vertical partial cleavage connection ribs 4b and 4a is made smaller than the height h2 of up division connection rib 4b. Besides, the height of the lower division connection ribs 4b and 4a is good for the inner circumference lip 2 side also as the same height from the periphery lip 3 side.

[0009] Moreover, the projected net area of the lateral surface 401 of near lower division connection rib 4a and a medial surface 400 connected with the inner circumference lip 2 among the divided vertical partial cleavage connection ribs 4b and 4a is made almost equal. As an approach of making this projected net area almost equal, it is attained as a configuration ensured [for example most easily and] by making almost equal the die length L1 of the lateral surface 401 of lower division connection rib 4a, and the die length L2 of a medial surface 400. In addition, in this invention, since what is necessary is just to make almost equal the projected net area of the lateral surface 401 of lower division connection rib 4a, and a medial surface 400, not only making equal the above-mentioned die length L1 and L2 but various approaches are possible.

[0010] Since lower division connection rib 4a makes almost equal the projected net area of that lateral surface 401 and medial surface 400, at the time of the hydraulic actuation to packing, the pressure which acts on the lateral surface 401 and medial surface 400 of lower division connection rib 4a will become equal, and it will be in equilibrium, so that I may be understood with this operation gestalt. Consequently, an operation of the excessive thrust to the inner circumference lip 2 by lower division connection rib 4a is lost.

[0011] In addition, in each above-mentioned operation gestalt, although the number of above-mentioned Liv Nakama 5 is one, though natural, it is good [the number is good also as plurality, and] also as packing without Liv Nakama 5. Furthermore, Liv Nakama 5 is good inside also as height suitably exceeding outer edge surface 2b of the periphery lips 2 and 3, and 3b.

[0012]

[Effect of the Invention] Thus, the inner circumference lip and periphery lip which projected to shaft orientations, and were formed in one side face of an annular packing body and this packing body in

invention of claim 1, and were estranged by radial, It has two or more connection ribs with which it was formed in the packing body and spacing was kept in the circumferential direction so that each medial surface of this inner circumference lip and a periphery lip might be connected. In packing with which two or more above-mentioned connection ribs were made into the height of the same direction which is mostly prolonged in a tangential direction and does not exceed the outer edge surface of a periphery lip inside to the medial surface of an inner circumference lip, the projected net area of the lateral surface of a connection rib and a medial surface is made equal. For this reason, at the time of the hydraulic actuation to packing, the pressure which acts on the lateral surface and medial surface of a lower division connection rib will become equal, and will be in equilibrium. Consequently, an operation of the excessive thrust to the inner circumference lip by the lower division connection rib is lost, the excessive abrasion of an inner circumference lip is prevented, and the sealing fall of an inner circumference lip is prevented.

[0013] In invention of claim 2 moreover, on the packing body between the above-mentioned inner circumference lip and a periphery lip Liv Nakama prolonged on the periphery is formed and the above-mentioned connection rib is divided into radial by above-mentioned Liv Nakama. It is the configuration that the projected net area of the lateral surface of the near lower division connection rib connected with the inner circumference lip among the divided vertical partial cleavage connection ribs and a medial surface was made equal, and a projected net area is obtained equally easily that what is necessary is to take only a lower division connection rib into consideration.

[0014] By making almost equal the near lateral-surface die length L1 and the near medial-surface die length L2 of a lower division connection rib which were connected with the inner circumference lip among the divided vertical partial cleavage connection ribs in invention of claim 3 further again, it is the configuration that the projected net area of the lateral surface of a lower division connection rib and a medial surface was made equal, and a configuration is easy and a projected net area is obtained more easily.

DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]

[Drawing 1] It is the top view of the operation gestalt of this invention.

[Drawing 2] It is the A-A sectional view of drawing 1 .

[Drawing 3] It is the top view of the conventional packing.

[Description of Notations]

1 Packing Body

2 Inner Circumference Lip

3 Periphery Lip

4 Connection Rib

4a Lower division connection rib

4b Up division connection rib

5 Liv Nakama

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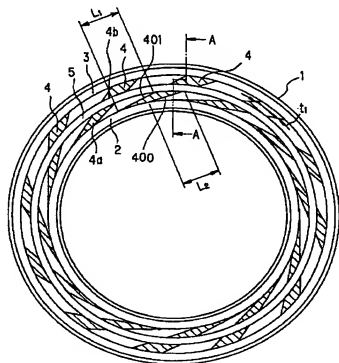
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(54) 【発明の名称】 バッキン

(57) 【要約】

【課題】 内周リップの局部摩耗を防止するバッキンを提供することを目的とする。

【解決手段】 環状のバッキン本体1と、このバッキン本体1の一側面に軸方向に突出して形成されかつ半径方向に離間された内周リップ2および外周リップ3と、この内周リップ2と外周リップ3の各内側面2a、3aが連結されるようにバッキン本体1に形成され円周方向に間隔が置かれた複数の連結リップ4とを備え、上記複数の連結リップ4が内周リップ2の内側面2aに対して同一方向のほぼ接線方向に延びかつ内、外周リップ2、3の外端面2b、3bを越えない高さとしたバッキンにおいて、連結リップ4の外側面401と内側面400の受圧面積が等しくされたことを特徴とする。



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【特許請求の範囲】

【請求項1】 環状のバックン本体と、このバックン本体の側面に軸方向に突出して形成されかつ半径方向に離間された内周リップおよび外周リップと、この内周リップと外周リップの各内側面が連結されるようにバックン本体に形成され円周方向に間隔が置かれた複数の連結リップとを備え、上記複数の連結リップが内周リップの内側面に対して同一方向のほぼ接線方向に延びかつ内、外周リップの外端面を越えない高さとしたバックンにおいて、連結リップの外側面と内側面の受圧面積が等しくされたことを特徴とするバックン。

【請求項2】 上記内周リップと外周リップ間のバックン本体に、円周上に延びた中間リップが形成され、上記中間リップにて上記連結リップが半径方向に分割され、分割された上下部分割連結リップのうち内周リップに連結された側の下部分割連結リップの外側面と内側面の受圧面積が等しくされたことを特徴とする請求項1に記載のバックン。

【請求項3】 分割された上下部分割連結リップのうち内周リップに連結された側の下部分割連結リップの外側面長さL1と内側面長さL2がほぼ等しくされることにより、下部分割連結リップの外側面と内側面の受圧面積が等しくされたことを特徴とする請求項2に記載のバックン。

【発明の詳細な説明】

【0001】

【発明の属する技術分野】この発明は、バックンの改良に関する。

【0002】

【従来の技術】従来、図3（特公平5-588号公報に相当）で知られるバックンは、環状のバックン本体31と、このバックン本体31の側面31aに軸方向に突出して形成されかつ半径方向に離間された内周リップ32および外周リップ33と、この内周リップ32と外周リップ33の各内側面32a、33aが連結されるようにバックン本体31に形成され円周方向に間隔が置かれた複数の連結リップ34とを備え、上記複数の連結リップ34が内周リップ32の内側面32aに対して同一方向のほぼ接線方向に延びかつ内、外周リップ32、33の外端面を越えない高さとなされ、上記内周リップ32と外周リップ33間のバックン本体31に、円周上に延びかつ内、外周リップ32、33の外端面を越えない高さとした中間リップ35が形成され、上記中間リップ35にて上記連結リップ34が半径方向に分割されている。そして、上記分割された上下部分割連結リップ34b、34aのうち内周リップ32に連結された側の下部分割連結リップ34aの外側面341の長さL3は内側面340の長さL4に比べ長く形成され、外側面341の受圧面積が内側面340の受圧面積より大きくなるようにされている。

【0003】

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【発明が解決しようとする課題】上記の従来のバックンにおいては、上記分割された上下部分割連結リップ34b、34aのうち内周リップ32に連結された側の下部分割連結リップ34aの外側面長さL3は内側面長さL4に比べ長く形成されて外側面341の受圧面積が内側面340の受圧面積より大きくされているため、バックンへの油圧作動時に、下部分割連結リップ34aは受圧面積の大きい外側面341から受圧面積の小さい内側面340へと圧力が作用する。この結果、下部分割連結リップ34aの内側面340が内周リップ32と接触する相手部材に押圧され、内周リップ32に局部摩耗が生じる恐れがある。この内周リップ32に局部摩耗が生じると内周リップ32の密封性の低下につながる。

【0004】そこで、この発明は、内周リップの局部摩耗を防止するバックンを提供することを目的とする。

【0005】

【課題を解決するための手段】上記課題を解決するための手段として、請求項1の発明は、環状のバックン本体と、このバックン本体の側面に軸方向に突出して形成されかつ半径方向に離間された内周リップおよび外周リップと、この内周リップと外周リップの各内側面が連結されるようにバックン本体に形成され円周方向に間隔が置かれた複数の連結リップとを備え、上記複数の連結リップが内周リップの内側面に対して同一方向のほぼ接線方向に延びかつ内、外周リップの外端面を越えない高さとしたバックンにおいて、連結リップの外側面と内側面の受圧面積が等しくされたことを特徴とする。

【0006】また、請求項2の発明は、上記内周リップと外周リップ間のバックン本体に、円周上に延びた中間リップが形成され、上記中間リップにて上記連結リップが半径方向に分割され、分割された上下部分割連結リップのうち内周リップに連結された側の下部分割連結リップの外側面と内側面の受圧面積が等しくされたことを特徴とする。

【0007】さらにまた、請求項3の発明は、分割された上下部分割連結リップのうち内周リップに連結された側の下部分割連結リップの外側面長さL1と内側面長さL2がほぼ等しくされることにより、下部分割連結リップの外側面と内側面の受圧面積が等しくされたことを特徴とする。

【0008】

【発明の実施の形態】以下、この発明の具体的な実施の形態について説明する。図1および図2はこの発明のバックンの実施形態である。環状のバックン本体1と、このバックン本体1の側面1aに軸方向に突出して形成されかつ半径方向に離間された内周リップ2および外周リップ3と、この内周リップ2と外周リップ3の各内側面2a、3aが連結されるようにバックン本体1に形成され円周方向に間隔が置かれた複数の連結リップ4とを備え、上記複数の連結リップ4が内周リップ2の内側面2aに対して同一方向のほぼ接線方向に延びかつ内、外周リ

ップ2、3の外端面2b、3bを越えない高さとしてされている。上記各連結リブ4の内周方向幅t1と、外周リブ3側から徐々に連続して内周リブ2側まで減少させられている。また、上記内周リブ2と外周リブ3間のパッキン本体1の一側面1aには、円周上に延びかつ内、外周リブ2、3の外端面2b、3bを越えない高さとなされた中間リブ5が形成され、上記中間リブ5にて上記連結リブ4が半径方向に分割されて上下部分割連結リブ4b、4aとされ、この分割された上下部分割連結リブ4b、4aのうち内周リブ2に連結された下部分割連結リブ4aの高さh1が上部分割連結リブ4bの高さh2より小さくされている。この上下部分割連結リブ4b、4aの高さは外周リブ3側から内周リブ2側に同一の高さとしてもよい。

【0009】また、分割された上下部分割連結リブ4b、4aのうち内周リブ2に連結された側の下部分割連結リブ4aの外側面401と内側面400の受圧面積がほぼ等しくされている。この受圧面積をほぼ等しくする方法としては、例えば、最も容易で確実に行う構成として、下部分割連結リブ4aの外側面401の長さL1と内側面400の長さL2をほぼ等しくさせることにより達成される。なお、本発明においては、下部分割連結リブ4aの外側面401と内側面400の受圧面積をほぼ等しくすればよいから、上記長さL1、L2を等しくすることに限らず種々の方法が可能である。

【0010】この実施形態にて理解されるように、下部分割連結リブ4aは、その外側面401と内側面400との受圧面積をほぼ等しくしているため、パッキンへの油圧作動時、下部分割連結リブ4aの外側面401と内側面400に作用する圧力が均等になり平衡状態となる。この結果、下部分割連結リブ4aによる内周リブ2への余分な押圧力の作用がなくなる。

【0011】なお、上記各実施形態においては、上記中間リブ5の数は1本であるが、その数は複数としてもよいし、当然ながら、中間リブ5のないパッキンとしてもよい。さらに、中間リブ5は内、外周リブ2、3の外端面2b、3bを適宜越える高さとしてもよい。

【0012】

【発明の効果】このように、請求項1の発明では、環状のパッキン本体と、このパッキン本体の一側面に軸方向

に突出して形成されかつ半径方向に離間された内周リブおよび外周リブと、この内周リブと外周リブの各内側面が連結されるようにパッキン本体に形成され円周方向に間隔が置かれた複数の連結リブとを備え、上記複数の連結リブが内周リブの内側面に対して同一方向のほぼ接線方向に延びかつ内、外周リブの外端面を越えない高さとなされたパッキンにおいて、連結リブの外側面と内側面の受圧面積が等しくされている。このため、パッキンへの油圧作動時、下部分割連結リブの外側面と内側面に作用する圧力が均等になり平衡状態となる。この結果、下部分割連結リブによる内周リブへの余分な押圧力の作用がなくなり、内周リブの局部摩耗が防止され、内周リブの密封性の低下が防止される。

【0013】また、請求項2の発明においては、上記内周リブと外周リブ間のパッキン本体に、円周上に延びた中間リブが形成され、上記中間リブにて上記連結リブが半径方向に分割され、分割された上下部分割連結リブのうち内周リブに連結された側の下部分割連結リブの外側面と内側面の受圧面積が等しくされた構成であり、下部分割連結リブのみを考慮すればよく、容易に等しく受圧面積が得られる。

【0014】さらにまた、請求項3の発明においては、分割された上下部分割連結リブのうち内周リブに連結された側の下部分割連結リブの外側面長さL1と内側面長さL2がほぼ等しくされることにより、下部分割連結リブの外側面と内側面の受圧面積が等しくされた構成であり、形状が簡単で受圧面積がより容易に得られる。

【図面の簡単な説明】

【図1】本発明の実施形態の平面図である。

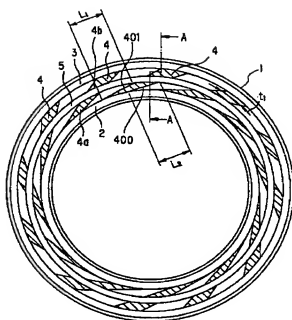
【図2】図1のA-A断面図である。

【図3】従来のパッキンの平面図である。

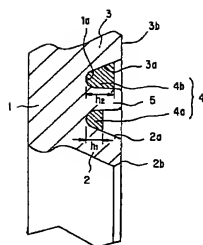
【符号の説明】

- 1 パッキン本体
- 2 内周リブ
- 3 外周リブ
- 4 連結リブ
- 4a 下部分割連結リブ
- 4b 上部分割連結リブ
- 5 中間リブ

【図 1】



【図 2】



【図 3】

